

Remarks

With this amendment, claims 37 and 38 are amended and claim 43 is cancelled from the application.

Objections to the Specification

The disclosure was objected to because of two informalities. The specification has been amended above as suggested by the Examiner to correct the informalities by inserting the U.S. Patent number of the parent application on the first line of page 1, and by correcting a typographical error in a patent number on page 3, line 3.

With the above amendments, the informalities in the disclosure have been corrected and withdrawal of the objection to the disclosure is respectfully requested.

Information Disclosure Statement

The Examiner has noted that on page 3, line 3, the applicant discusses the prior art patent to Casson et al. but recites the wrong patent number. The applicant thanks the Examiner for finding the error in the patent number and for considering the Casson et al. patent, U.S. Patent No. 5,502,889 as originally intended by the applicant.

Claim Objections

Claims 37 and 38 are objected to because of several informalities. Claims 37 and 38 have been amended as specified by the Examiner in the Office Action to correct the informalities. Accordingly, withdrawal of the objections to the claims 37 and 38 is respectfully requested.

Claim Rejections Under 35 USC §112

Claims 37-43 stand rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In the Office Action, the Examiner has specified three necessary corrections in claim 37 and one needed correction in claim 38. With the above amendments to claims 37 and 38, the claims have been amended as directed by the Examiner to overcome the rejections under 35 USC §112, second paragraph. Because claims 39-43 depend from claim 38, those claims are also now corrected. With the above amendments, withdrawal of the rejection of claims 37-43 under 35 USC §112, second paragraph is respectfully requested.

Allowable Subject Matter

The Examiner has indicated that claim 43 would be allowable if rewritten to overcome the rejections under 35 USC §112, second paragraph, as set forth in this Office Action and to include all of the limitations of the base claim and any intervening claims. With this amendment, the limitation of claim 43 has been included in claim 38, and claim 43 cancelled from the application. Thus, claim 38 is now in allowable condition, and notice to that effect is respectfully requested.

Claim 37 has also been amended to include the limitation that the second insulating layer includes an adhesive. With the amendment to claim 37, as described in greater detail below, claim 37 as amended is now also in allowable condition and notice to that effect is requested.

Claim Rejections Under 35 USC §102

Claims 37-42 stand rejected under 35 USC §102(b) as being anticipated by Scholz. As to claim 37, the Examiner notes that the limitation “removing at least a portion of said second insulating layer proximate to the apex of said conducting member” is a process limitation in a product claim and cannot serve to patentably define the product over the prior art of record. With this amendment, claim 37 has been amended from a product by process claim to a method claim. Specifically, claim 37 now claims a method for forming an electronic circuit element. Accordingly, the “removing” limitation can serve to patentably define the claimed method over the prior art of record. Because Scholz never covers the conducting member, Scholz does not and cannot show, teach or suggest the “removing” limitation of claim 37. Accordingly, withdrawal of the rejection of claim 37 under 35 USC §102(b) is respectfully requested.

As to claim 38, the Examiner’s rejections under §102(b) are rendered moot by the inclusion of the limitation of claim 43 into claim 38. As noted above, claim 38 is now in allowable condition, as are claims 39-42 which depend from claim 38. Accordingly, withdrawal of the rejection of claim 38 under §102(b) is respectfully requested.

Claims 37-42 have also been rejected under 35 USC §102(e) as being anticipated by Akram et al. With respect to claim 37, as noted above, the amended claim 37 now claims a method for forming an electronic circuit element, where the limitation that the second insulating layer includes an adhesive and the “removing” process limitation patentably define the product over the prior art of record. Accordingly, withdrawal of the rejection of claim 37 under §102(e) is respectfully requested. As to claim 38, the inclusion of the limitation of

claim 43 into claim 38 renders claim 38 and its dependent claims 39-42 allowable. Accordingly, withdrawal of the rejection of claims 38-42 under §102(e) is respectfully requested.

Summary

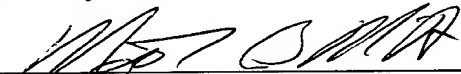
With the above amendments and for the reasons discussed above, claims 37-42 are now in allowable condition and notice to that affect is respectfully requested.

If it would in any way facilitate the allowance of this application, the Examiner is invited to contact the below-signed attorney at 512-984-3958.

Registration Number 39,766	Telephone Number 512-984-3958
Date 3-15-01	

Respectfully submitted,

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Version With Markings to Show Changes Made

[METHOD FOR MAKING] CIRCUIT ELEMENTS [FOR] USING A Z-AXIS
INTERCONNECT

U.S. Patent No. [5,502,884] 5,502,889 (Casson et al.) discloses a method for fabricating a multilayer circuit board, that uses an anisotropically conducting adhesive to connect multiple layers of double sided circuitry. However, the resultant circuit has drawbacks, in that the use of a random dispersion of particles can not provide the high density of hole (or via) interconnections required for high performance circuits due to the possible electrical shorting between contacts. In addition, the random dispersion of particles requires patterned masking of the circuit layers to prevent shorting between layers.

37. (amended) [An electronic circuit element made in by] A method for forming an electronic circuit element, the method comprising:

- providing a precursor element including a first insulating layer and a first conductor attached to said first insulating layer, said first insulating layer having a first surface, at least a portion of said first surface defining a first surface plane and said precursor element having a surface, said precursor element surface including said first surface of said first insulating layer;
- placing a conducting member onto the precursor [circuit] element and into electrical communication with said first conductor, said conducting member including a surface and protruding to an apex at a first level, said first level at least beyond said first surface plane;
- said precursor element surface and said conducting member surface defining a major surface of a predetermined shape;
- placing a second insulating layer including an adhesive onto substantially all of said major surface, said second insulating layer including oppositely disposed portions extending laterally from said conducting member along said first surface of said first insulating layer, said second insulating layer at said oppositely disposed portions extending to a second level, said first level beyond said second level; and

removing at least a portion of said second insulating layer proximate the apex of said conducting member.

38. (amended) An electronic circuit element comprising:

a first insulating layer having at least one surface, at least a portion of said surface defining a first surface plane;

at least one conductor along at least a portion of said at least one surface,

a conducting member in communication with said at least one conductor, said conducting member protruding to an apex at a first level, said first level beyond said first surface plane, said conducting member including a surface[,]; said surface of said first insulating layer, said at least one [surface of said] conductor, and said surface of said conducting member, defining a major surface of a predetermined shape;

a second insulating layer along at least a portion of said major surface whereby at least a portion of said conducting member remains exposed, said second insulating layer including portions extending laterally from said conducting member along said first insulating layer, said laterally extending portions extending from said first surface plane to a second level, said second level less than said first level wherein said second insulating layer includes an adhesive.